Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

GEOMETRY.

118. Proposed by W. H. CARTER, Vice President and Professor of Mathematics, Centenary College, Jackson, La.

A picture b feet long hangs on a wall at an inclination θ to the wall, with its base a feet from the floor. How far from the wall should an admirer sit to see it to the best advantage, supposing the light to be equally distributed throughout the room ?

119. Proposed by WILLIAM HOOVER, A. M., Ph. D., Professor of Mathematics and Astronomy, Ohio State University, Athens, Ohio.

A sphere touches each of two straight lines which are inclined to each other at a right angle but do not meet; show that the locus of its center is an hyperbolic paraboloid.

*** Solutions of these problems should be sent to B. F. Finkel not later than May 10.

CALCULUS.

88. Proposed by JOHN M. ARNOLD, Crompton, R. I.

When a watch is wound up, the mainspring is closely coiled around a cylindrical piece called the hub of the barrel-arbor. When entirely run down the spring forms an annulus against the inner circumference of the barrel. Show that if the width of the annnlus is a little more than one-fourth of the radius of the barrel, the spring will run the watch the greatest number of hours at one winding, the diameter of the hub being one-third the inside diameter of the barrel.

89. Proposed by WILLIAM HOOVER, A. M., Ph. D., Professor of Mathematics and Astronomy, Ohio State University, Athens, Ohio.

Integrate the equation,

$$\frac{dy}{dx}+y\cos x=\frac{\sin 2x}{2}.$$

*** Solutions of these problems should be sent to J. M. Colaw not later than May 10.

MECHANICS.

87. Proposed by H. C. WHITAKER, M. E., Ph. D., Professor of Mathematics, Manual Training School, Philadelphia, Pa.

"He on his impious foes onward drove,
Drove them before him to the bounds
And crystal walls of Heaven; which opening wide
Rolled inward and a spacious gap disclosed
Into the wasteful deep; headlong themselves they threw
Down from the verge of Heaven.
Nine days they fell; Hell at last
Yawning received them whole and on them closed."

Paradise Lost, Book VI.

Assuming Hell to be the center of the earth and the only force acting on the lost spirits to be that of gravity due to the earth's attraction,—How far is Heaven ?

88. Proposed by ALOIS F. KOVARIK, Instructor in Mathematics and Physics, Decorah Institute, Decorah, Iowa.

Show that the equation to the trajectory is

$$y=x\tan\alpha-\frac{gx^2}{2v^2\cos^2\alpha},$$